

Asthma
Surveillance Report



April-June
2011

In Montana, the prevalence of smoking among adults with current asthma was significantly higher than that of people without asthma (23% vs. 17%)

Source: BRFSS 2008 & 2009

Twelve percent of children with asthma reported that someone smoked in their home in the last week

Source: Asthma Call-Back Survey, 2006-2009

Asthma and Smoking in Montana

Tobacco as an Asthma Trigger

Smoking and/or exposure to environmental tobacco smoke (ETS) at any age is harmful, especially for people with asthma. The Institute of Medicine's *Clearing the Air* report identified exposure to ETS as having sufficient evidence to be a cause of asthma exacerbation and sufficient evidence to be associated with causing asthma in children.¹ Other studies have shown an association between *in utero* exposure to ETS and an increased incidence of childhood asthma.^{2,3} Finally, in adults who have asthma, cigarette smoking has been associated with increased asthma severity and decreased responsiveness to inhaled corticosteroids.⁴ Despite being an at-risk population, adults with asthma in Montana report the use of cigarettes at higher rates than people without asthma.

This report examines tobacco use and ETS exposure among Montana residents of all ages and discusses recommended cessation methods for current smokers. The Montana Asthma Control Program and the Montana Tobacco Use Prevention Program work closely to provide tools and information for all Montanans to improve their health.

Methods for Measuring Asthma in Montana

The Behavioral Risk Factor Surveillance System (BRFSS) survey is a state based, random digit dial telephone survey of a sample of non-institutionalized adults conducted in all 50 states. The survey consists of questions about health behaviors and lifestyle choices, including several questions related to asthma and tobacco. The survey does not capture persons in homes without a telephone.

The Montana Youth Risk Behavior Survey (YRBS) is conducted every two years in a subset of participating high schools. The survey asks a variety of questions on tobacco use. The data are weighted to represent all high school students in the state.

These two surveys include two questions about the occurrence of asthma: 'Has a doctor or nurse ever told you that you have asthma?' and 'Do you still have asthma?' In the BRFSS, current smoking is defined as reporting having smoked 100 cigarettes in a lifetime and currently smoking some or all days. For youth (YRBS), current smoking is defined as reporting cigarette use in the last 30 days. Respondents reporting they currently have asthma and currently smoke were included in this report.

The Adult Tobacco Survey (ATS) is a population-based telephone survey conducted in Montana that includes questions about tobacco use, and knowledge and attitudes about tobacco. The survey assesses whether respondents have a number of ETS related diseases including asthma.

Asthma and Smoking Among Montanans

In Utero and Childhood

Exposure to tobacco smoke is harmful for persons of all ages, starting *in utero*. Smoking during pregnancy can have serious effects on an infant's lungs and during childhood can reduce the beneficial effects of inhaled corticosteroid use among people with asthma.⁵ The Surgeon General concluded that there is no risk-free level of ETS exposure and even brief exposures can be harmful.⁶ Despite this evidence, 16% of pregnant women in Montana smoked during their pregnancy (Office of Vital Statistics, 2009). Twelve percent (95% CI 6.5%-17.1%) of children with asthma reported that someone smoked in their home in the last week (Asthma Call-Back Survey, 2006-2009).

Despite smoking being a known asthma trigger, many people with current asthma also smoke tobacco. The following sections examine the prevalence of smoking among high school students and adults with current asthma.

Sixteen percent of pregnant women in Montana smoked during their pregnancy in 2009

Source: Office of Vital Statistics

High School Students

Twenty-four percent of high school students who reported having asthma in Montana reported smoking in the last 30 days (YRBS, 2007,2009). The prevalence was not statistically different from high school students who do not have asthma (18.6% 95% CI 16.2%-21.0%).

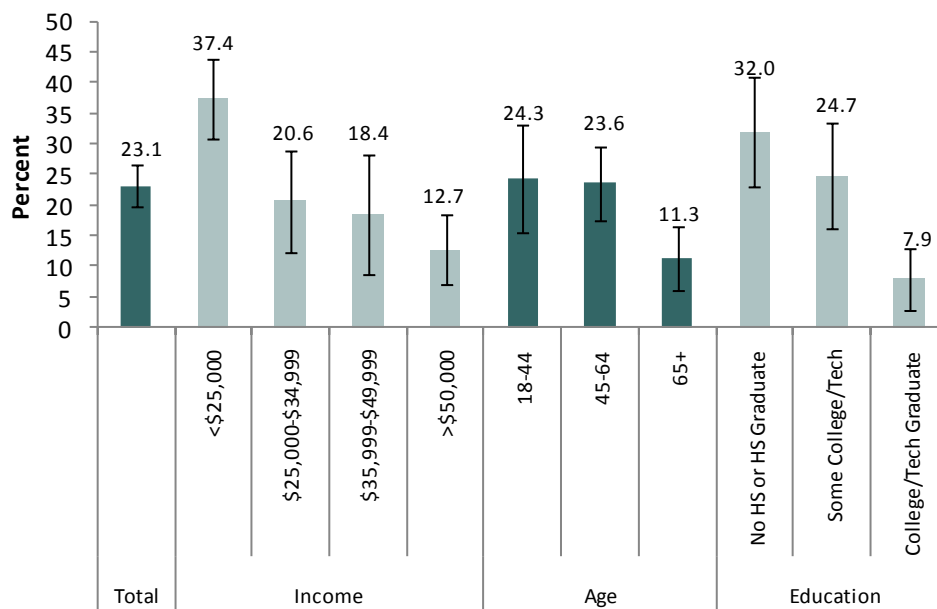
- There were no statistically significant differences in smoking prevalence of high school students with current asthma between sexes, ages, and grades (YRBS, 2007, 2009, Data not shown).

Adults

Among adults with asthma in Montana, the overall prevalence of current smoking was 23% (95% CI 26.6%-19.6%) (BRFSS, 2008-2009). This prevalence is significantly higher than of adults without asthma (17% 95% CI 18.1%-16.1%).

- Adults with current asthma who earn less than \$25,000 had a significantly higher prevalence of being smokers than adults in other income levels (Figure 1).
- There were no statistically significant differences in smoking prevalence among adults with asthma by sex (BRFSS, 2008-2009, Data not shown).

Figure 1. Prevalence of smoking among adults with current asthma by demographic category, BRFSS, Montana, 2008-2009*



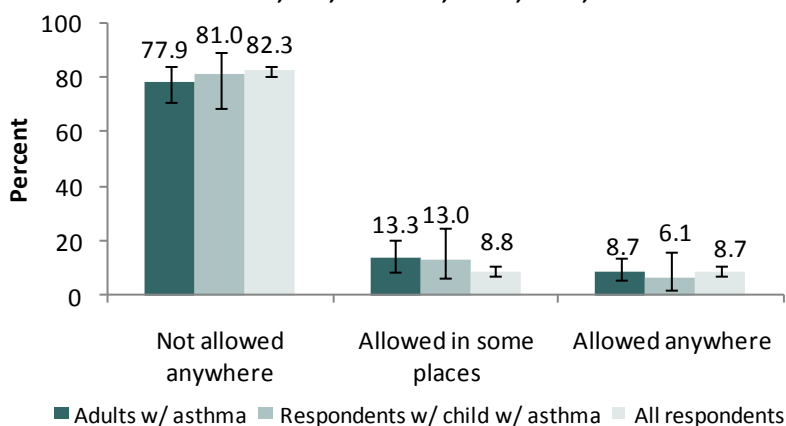
* Combining multiple years of data required reweighting
I = 95% confidence interval

- Adults with current asthma aged 65 and older had a significantly lower prevalence of smoking than people aged 18-44 and 45-64 (Figure 1).
- Adults with current asthma who have a college or technical school degree had a significantly lower frequency of smoking than adults of other educational levels (Figure 1).

Exposure to Tobacco Among People with Lifetime Asthma

The Clean Indoor Air Act was fully implemented on October 1, 2009, eliminating ETS exposure for people working or visiting public places in Montana. However, 9% of adults with asthma and 6% of adults with children with asthma report that smoking is allowed anywhere in the home (Figure 2). Restricting the locations where smoking is permitted in the workplace, car, and home can greatly reduce ETS exposure. Eighty percent of adults in Montana who have ever had asthma, those with children who have ever had asthma, and the general population report that smoking is not allowed anywhere in their home (Figure 2). The car is another significant place for exposure to ETS. The air quality in a car can reach over ten times the hazardous level when an occupant is smoking.⁷ Twenty-five percent of adults with asthma reported they were exposed to ETS in the car in the last 7 days (ATS, 2004, 2005, 2009).

Figure 2. Rules about smoking in the home by asthma status, ATS, Montana, 2004, 2005, 2009*



* Combining multiple years of data required reweighting
I = 95% confidence interval

Recommended Ways to Quit Using Tobacco

The 2008 *Clinical Practice Guideline for Treating Tobacco Use Dependence* recommends that health care providers consistently document the tobacco use status of patients.⁸ However, only 69% of adults with asthma report their health care provider assessed their smoking status and only 68% of those who smoked reported that they were advised to quit (ATS, 2004, 2005, 2009).

MONTANA TOBACCO



The guideline also recommends both cessation counseling and cessation medication for people trying to quit tobacco use. The Montana Tobacco Quit Line provides free counseling, low cost or free medication and other support resources. Tobacco users who used services through the Montana Tobacco Quit Line have experienced great success. Six-month quit rates (seven day point prevalence) for participants who participate in coaching sessions and choose medication are 31% for nicotine replacement therapy and 32% for Chantix®.

Discussion and Key Clinical Recommendations

Tobacco is a significant source of morbidity and mortality and is a known asthma trigger that can cause asthma exacerbations. In Montana, about 17% of the general population report that they smoke and 23% of people with current asthma report that they smoke. By decreasing the percent of people with asthma who smoke and by reducing the exposure to ETS, the number of asthma exacerbations can be decreased as well. For your patients with asthma who smoke:

- Discuss tobacco use and recommend resources for cessation. Contact the Montana Tobacco Use Prevention Program for smoking cessation resources at 406-444-7373.
- Use the 5 “A”s when counseling a patient on tobacco cessation: ask about tobacco use, advise on quitting, assess willingness to quit, assist in quitting, and arrange for follow-up.
- Encourage establishing no smoking rules inside the home and vehicles.
- Contact the Montana Asthma Control Program at 405-444-7304 for more information.

Footnotes

1. Institute of Medicine. Clearing the air: Asthma and Indoor Air Exposures. Washington DC: National Academy Press. 2000.
2. Gilliland F, Li Y, Peters J. Effects of maternal smoking during pregnancy and environmental tobacco smoke on asthma and wheezing in children. *Am J Respir Crit Care Med*. 2001; 163:429-436.
3. Pattenden S, Antova T, Neuberger N, et al. Parental smoking and children's respiratory health: independent effects of prenatal and postnatal exposure. *Tobacco Control* 2006; 15:294-301.
4. National Heart Lung and Blood Institute (US). Expert Panel Review-3 Guidelines to Asthma Management. National Institutes of Health (US); 2007 Aug. NIH Pub. Available at: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>
5. Cohen RT, Raby B, Van Steen K, et al. In utero smoke exposure and impaired response to inhaled corticosteroids in children with asthma. *J Allergy Clin Imm*. 2010; 126:491-497.
6. Office of the Surgeon General. The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. US Dept of Health and Human Services. Accessed at: <http://www.surgeongeneral.gov/library/secondhandsmoke/factsheets/factsheet2.html>
7. Ott W, Klepeis N, Switzer P. Air change rates of motor vehicles and in-vehicle pollutant concentrations from secondhand smoke. *J Expo Sci Environ Epidemiol*. 2008; 18:312-25.
8. Fiore MC, Jaen CR, Baker TB, et al. Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline. Rockville, MD: US Dept of Health and Human Services. May 2008.

For more information, visit the Asthma Control Program
website: <http://dphhs.mt.gov/asthma>



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Asthma and Smoking



- Percent of adults and high school students with asthma who smoke by demographic characteristics
- Reported exposure to environmental tobacco smoke among people with asthma
- Resources for patients with asthma who smoke

LOOK INSIDE FOR INFORMATION ON:

The Montana Asthma Control Program is funded through the Montana State Legislature and the Centers for Disease Control and Prevention. The goal of the program is to improve the quality of life for all Montanans with asthma. For more information, visit our website at <http://dphhs.mt.gov/asthma>

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